Department of Defense Human Factors Engineering Technical Advisory Group (DOD HFE TAG)

Virtual TAG 2020

18 – 19 November

1200-1630 EDT / 0900-1330 PDT

US Navy Hosted

Held via MS Teams

UNCLASSIFIED

DoD HFE TAG

Origin

The Assistant Secretaries of the Services signed a Memorandum of Understanding in 1976 for coordinating and communicating working level Human Factors Engineering (HFE) research and development among the services and other Government agencies. As a result, the first Department of Defense Human Factors Engineering Technical Group (DoD HFE TAG) convened on August 9–10, 1977 in Fort Washington, Pennsylvania.

Goals

The DoD HFE TAG (TAG) provides a no-cost registration mechanism for the timely exchange of technical information in the development and application of HFE by enhancing the coordination among Government agencies involved in HFE and Human Systems Integration (HSI) technology research, development, and application. The TAG also assists in the preparation and coordination of documents and sponsors in-depth technical interaction, which aids in identifying HFE technical issues, technology gaps and cross service solutions.

Proponent

Dr. James "Ben" Petro, Director, Human Systems Directorate, Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) works closely with TAG Leadership to plan and sustain the TAG.

Scope

The scope of the technical areas addressed by the TAG is broad due to the diversity of the subject matter covered by the HFE discipline. TAG defines HFE as the concepts, data, methodologies and procedures relevant to the development, operation, and maintenance of hardware and software systems. The subject matter subsumes all technologies aimed at understanding and defining the capabilities of human operators and maintainers.

Composition

The TAG is composed of technical representatives from the DoD, National Aeronautics and Space Administration (NASA), Federal Aviation Administration (FAA), Department of Homeland Security (DHS), and the Veterans Health Administration (VHA) with research and development responsibility in human factors and related disciplines. Representatives from organizations with aligned interests and technical experts from allied countries may attend through TAG Member sponsorship. The TAG also includes designated representatives of technical societies or industry associations credentialed through the TAG Technical Society / Industry (TS/I) Group.

Please direct VTAG questions, concerns, or requests to

- Chair: Dr. Tom Alicia; thomas.j.alicia.civ@mail.mil
- Vice Chair: Ms. Marianne Paulsen; marianne.paulsen@navy.mil

VIRTUAL TAG

The 2020 COVID-19 crisis necessitated agility and resilience of typical TAG constructs and processes. Once TAG leadership realized that we could not safely hold an in-person session in 2020, we began to conceptualize a Virtual TAG (VTAG) for the Fall. The main objective of VTAG is to sustain timely opportunities for cross service HFE/HSI practitioners to present current research, analyses, and perspectives with fellow practitioners, international peers and the military workforce in the absence of an in person session.

As a technical community consistently on the forefront of technology and innovation, we appreciate the importance of recency and relevancy when it comes to presenting and publishing HFE work. Therefore, with the endorsement and support of our OUSD(R&E) Proponent, TAG Leadership applied creative solutions to scale our typical weeklong in-person meeting with 19+ parallel technical tracks down to four virtual, sequential technical areas spanning two half-days via Microsoft Teams. Distribution A is required for all presentations to maximize attendance of a geographically distributed workforce across and outside of our community of practice.

Current TAG members will notice that the structure of the VTAG agenda looks quite different from our typical program. VTAG planners suspended the typical SubTAG construct and processes in order to support a popup virtual arrangement. The 2020 SubTAG Chairs provided abstracts already accepted through the TAG 74 submission process in February. Over the following few months, several communication cycles occurred with those speakers to confirm availability to present during an 18/19 November VTAG. The agenda places these topics into four technical areas:

- Modeling and Simulation
- Measurement and Analysis
- Readiness and Resilience
- Human System Integration

In addition to our community of practice technical briefs, your Navy host has secured speakers who will offer perspective on the importance of our readiness and resilience theme and the impact of what we do for the military workforce. A Naval Postgraduate School (NPS) representative will also provide a status update on the Adaptive Acquisition Pathways Workshop many TAG members participated in earlier this year.

VTAG THEME

Resilience 2020: Are We Ready?

The demanding nature of continuous operations and dynamic threat vectors require military and civilian personnel to demonstrate and sustain optimal cognitive and physical performance in challenging situations. Factors such as environmental stressors, physiology, fatigue, resources, culture, leadership, and communications affect human physical, mental, and emotional states. These impacts may materialize and even compound, reducing readiness and resilience of our military forces and civilian workforce.

The focus of this virtual event is on applying an interdisciplinary, human centric approach to the exploration of challenges and solutions relating to whole system resilience as a major enabler of mission readiness and sustained force lethality. DoD HFE TAG is providing this virtual forum as an opportunity for our members to sustain cross-service learning, leveraging, and information exchange across the HFE and Human Systems Integration (HSI) communities.

VTAG Program

**All times are in EDT and agenda is subject to change*

Wednesday, 18 November

Commencement Events

1200 - 1215	Welcome Day One	Tom Alicia, Ph.D., Chair
1215 - 1230	Opening Remarks	Ben Petro, Ph.D., OUSD (R&E) TAG Proponent
1230 - 1245	Keynote Address: TBD	TBD

Technical Sessions

1245 - 1415	Readiness and Resilience	
1415 - 1430	BREAK	
1430 - 1600	Modeling and Simulation	
1600 - 1630	Close Day One	Marianne Paulsen, Vice Chair

Thursday, 19 November

Special Events

1200 - 1205	Welcome Day Two	Marianne Paulsen, Vice Chair
1205 - 1230	TAG the Deckplate	ITCM Sean Lyons COMNAVAIRLANT Jennifer Blankenship, CNSP N67
1230 - 1245	Guest Speaker: HSI Across Adaptive Acquisition Pathways	Larry Shattuck, Ph.D. Naval Postgraduate School

Technical Sessions

1245 - 1415	Measurement and Analysis	
1415 - 1430	BREAK	
1430 - 1600	HSI	
1600 - 1630	VTAG Closing	Tom Alicia, Ph.D., Chair

18 NOV VTAG Technical Sessions

1245 - 1415 Readiness and Resilience

1245 - 1300	**Unit Resilience Measure Development and Validation** *Cassie Berry, Ph.D., U.S. Army Research Institute for the Behavioral and Social Sciences*
1300 - 1315	**Human Readiness Levels: Where Are We Now?** *Judi See, Ph.D., Sandia National Laboratories*
1315 – 1330	**Applications of Savoring to Enhance Resilience in Military Organizations** *Anton Sytine, Army Research Institute - Fort Benning Research Unit, GA*
1330 – 1345	**Task Demand Impact on Operator Communication and Mobility with Novel Display Technology** *Aaron Rowen Ph.D., Naval Information Warfare Center - Atlantic*
1345 - 1400	**Team Overmatch: Resilience Training in the Military** *Laura Milham, Ph.D., Naval Air Warfare Center Training Systems Division*
1400 - 1415	**Development of an Industry Standard Practice for Manpower and Personnel (SAE 1010)** *Christopher Plott, Ph.D., Alion Science & Technology*

1430 - 1600 Modeling and Simulation

1430 - 1445	**Graphical Fidelity Requirements for Spatial Orienting with 3D Terrains** *Aaron Gardony, US Army CCDC Soldier Center - Natick, MA*
1445 - 1500	**Determining the Arbiter for Dynamic Task Allocation in Adaptive Automation Systems** *Gabriella Hancock, Ph.D., California State University, Long Beach*
1500 - 1515	**IMPRINT Human Performance Modeling for Future Attack Reconnaissance Aircraft (FARA) Crew Workload and Configuration Assessments** *Scott Scheff, HF Designworks, Inc.*
1515 - 1530	**Building a Comprehensive Model of Performance in Human-Machine Teams** *Mike Brady, Infoscitex*
1530 - 1545	**Integrated Model Based Human Systems Engineering (MBHSE) Using the Systems Modeling Language (SysML)** *Clayton (CJ) Hutto, Georgia Tech Research Institute (GTRI)*
1545 - 1600	**Building Parlance Translator Modules for Natural Language Processors / Avatars Constructed with the ICT Virtual Human Tool Kit** *James Ness COL, West Point*

19 NOV VTAG Technical Sessions

1245 - 1415 Measurement and Analysis

1245 - 1300	**Fatigue Detection and Prediction Using Wearable Technology** *Rachel Sides, Naval Surface Warfare Center – Dahlgren*
1300 - 1315	**Using Human and Machine Facial Analysis in Navy Personnel Selection and Training** *Bob Pokorny, Ph.D., Intelligent Automation, Inc.*
1315 – 1330	**Computer-Assisted Text Analysis (CATA): Content Analysis Scoring of Structured Interview Questions** *James Johnson, Ph.D., United States Air Force*
1330 – 1345	**Task-Based Automated Test Case Generation for Autonomy and AI Test and Evaluation** *James Cunningham, United States Air Force*
1345 - 1400	**Accounting for Integrity and Cognitive Factors in a Workspace for Human-Machine Team Intelligence Analysis** *David LaVergne / Scott Friedman, SIFT*
1400 - 1415	**Analytically Oriented Human Performance Measures for Model Based Human Systems Engineering (MBHSE)** Clayton (CJ) Hutto, Georgia Tech Research Institute (GTRI)

1430 - 1600 Human Systems Integration

1430 - 1445	**Human Systems Integration for Polar Security Cutter Design** *Debra Clark-De Tora, Naval Surface Warfare Center – Dahlgren*
1445 - 1500	**Implementation of HSI in NASA's Gateway Program** *Sherry Thaxton / Jackelynn Silva-Martinez, NASA*
1500 - 1515	**The UK MoD Future Workforce & Human Performance Research Programme** *Mike Boardman, United Kingdom Ministry of Defence, Defence and Security Analysis*
1515 - 1530	**Human Augmentation Research and Policy in the MOD** *Joe Popiolek / Annalise Whittaker, United Kingdom Ministry of Defence, Defence and Security Analysis*
1530 - 1545	**Human Systems Integration Education Opportunities at AFIT** *Michael Miller, Ph.D., Air Force Institute of Technology*
1545 - 1600	**1472 The UK Version: A Comprehensive Set of HSI Guidelines for all the Domains** *Robert Smillie, FPE/CIEHF*

Thank you for attending VTAG 2020. We look forward to TAG #74 at Naval Surface Warfare Center Port Hueneme Division in Spring 2021!